

Application No. 09/994,458
Amendment Dated 8/23/05
Reply to Office Action of 5/23/05

This listing of claims will replace all prior versions, and listings, of claims in the application:

In the Claims:

1-14. CANCELED.

15. (CURRENTLY AMENDED) An apparatus for staining specimens carried on a plurality of slides, comprising:

a tray configured to hold the plurality of slides;

a rack configured to hold a plurality of reagent containers, each of said containers holding a volume of a reagent and including an upper wall, a base wall, and a tubular side wall interconnecting the base and upper walls, said upper wall spaced apart from said base wall along an imaginary line passing through the base and upper walls, said base wall having a plurality of distinct inwardly and downwardly converging wall sections that define a concave well with a nadir at a convergence of said wall sections and said upper wall having an access opening, said nadir and access opening being aligned with each other along said imaginary line, each of said reagent containers having associated therewith a two-dimensional data storage element containing encoded reagent information;

a robotic delivery system including a selectively and controllably movable probe configured to be positioned proximate selected ones of said reagent containers

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for withdrawing a reagent volume from said reagent containers and depositing the reagent volume on the slides according to a staining protocol, said robotic delivery system having an optical reader movable with said probe and configured to read said two-dimensional data storage element; and

a control system programmable for conducting said staining protocol, said control system operatively coupled to said robotic delivery system for controlling said probe and operatively coupled to said optical reader for retrieving said reagent information read by said optical reader from said two-dimensional data storage elements for use in programming said staining protocol.

16. (ORIGINAL) The apparatus of claim 15 wherein said control system includes a stat function operable for adding stat slides to said tray for staining.

17. (ORIGINAL) The apparatus of claim 15 wherein said control system includes a touchscreen display connected in electrical communication with said control system, said touchscreen display operable for displaying information provided by said control system and for inputting information to said control system.

18. (ORIGINAL) The apparatus of claim 15 wherein said two-dimensional data storage element includes an array of optically readable marks.

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19. (ORIGINAL) The apparatus of claim 15 wherein said data storage element is a two-dimensional bar code.

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26. (CURRENTLY AMENDED) A method of operating an autostainer for staining a tissue specimen carried on a slide according to a staining protocol, comprising:

providing a reagent container having an upper wall, a base wall, and a tubular side wall interconnecting the base and upper walls, said upper wall spaced apart from said base wall along an imaginary line passing through the base and upper walls, said base wall having a plurality of distinct inwardly and downwardly converging wall sections that define a concave well with a nadir at a convergence of said wall sections and said upper wall having an access opening, said nadir and access opening being aligned with each other along said imaginary line so that the probe entering said opening in a direction substantially parallel to said imaginary line is directed toward said nadir;

providing the reagent container with a two-dimensional data storage element containing encoded reagent information;

reading said two-dimensional data storage element to interpret the reagent information;

specifying the staining protocol for the tissue specimen using the reagent information; and

staining the tissue specimen on said specimen slide according to the staining protocol.

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27. (ORIGINAL) The method of claim 26 wherein said two-dimensional data storage element includes an array of optically readable marks and the step of reading includes using an optical reader to interpret the reagent information from the array of optically readable marks.

28. (ORIGINAL) The method as claimed in claim 26 wherein said data storage element comprises a two-dimensional bar code and the step of reading includes using a reader operable to interpret the reagent information from the two-dimensional bar code.

29-37. CANCELED.

38. (PREVIOUSLY PRESENTED) The reagent container of claim 15 wherein said upper wall includes a neck having a passageway extending substantially parallel to said imaginary line, said access opening being formed in said neck and being substantially coextensive with the cross-sectional area of said passageway.

39. (PREVIOUSLY PRESENTED) The reagent container of claim 38 further comprising a removable closure capable of engaging said neck and thereby sealing said access opening.

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40. (PREVIOUSLY PRESENTED) The reagent container of claim 15 wherein said base wall includes a spaced-apart pair of outwardly-projecting protrusions, said protrusions each providing a contact point when the reagent container is placed on a planar surface.

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41. (WITHDRAWN) An apparatus for staining specimens carried on a plurality of slides, comprising:

a tray configured to hold the plurality of slides;

a rack configured to hold a plurality of reagent containers, each of said containers holding a volume of a reagent and having associated therewith a two-dimensional data storage element containing encoded reagent information;

a robotic delivery system including a selectively movable probe configured to be positioned proximate selected ones of said reagent containers for withdrawing a reagent volume from said reagent containers and depositing the reagent volume on the slides according to a staining protocol, said robotic delivery system having an optical reader movable with said probe and configured to read said two-dimensional storage element;

a control system programmable for conducting said staining protocol, said control system operatively coupled to said robotic delivery system for controlling said probe and operatively coupled to said optical reader for retrieving said reagent information read by said optical reader from said two-dimensional data storage elements for use in programming said staining protocol; and

a chassis having a processing space and a first drawer supporting said tray, said first drawer having a first position in which said tray is positioned in said processing space for staining specimens on the slides and a second position in which

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said tray is positioned outside of said processing space for accessing the slides in said tray.

42. (WITHDRAWN) The apparatus of claim 41 wherein said chassis further includes a second drawer supporting said reagent rack, said second drawer having a third position in which said reagent rack is positioned in said processing space and a fourth position in which said reagent rack located outside of the processing space for one of adding reagents to said reagent containers and adding reagent containers to said reagent rack.

43. (WITHDRAWN) The apparatus of claim 42 wherein said rack is removably positioned within said second drawer.

44. (WITHDRAWN) The apparatus of claim 42 further comprising a cover movable relative to said chassis between a closed condition for enclosing said processing space and an open condition, said cover remaining in said closed condition when said first drawer is moved between said first and said second positions and said second drawer is moved between said third and said fourth positions.

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45. (WITHDRAWN) The apparatus of claim 41 further comprising a cover movable relative to said chassis between a closed condition for enclosing said processing space and an open condition, said cover remaining in said closed condition when said first drawer is moved between said first and said second positions.

46. (WITHDRAWN) The apparatus of claim 41 wherein said tray is removably positioned within said first drawer.

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47. (WITHDRAWN) An apparatus for staining specimens carried on a plurality of slides, comprising:

a tray configured to hold the plurality of slides;

a rack configured to hold a plurality of reagent containers, each of said containers holding a volume of a reagent and having associated therewith a two-dimensional data storage element containing encoded reagent information;

a robotic delivery system including a selectively movable probe configured to be positioned proximate selected ones of said reagent containers for withdrawing a reagent volume from said reagent containers and depositing the reagent volume on the slides according to a staining protocol, said robotic delivery system having an optical reader movable with said probe and configured to read said two-dimensional storage element;

a control system programmable for conducting said staining protocol, said control system operatively coupled to said robotic delivery system for controlling said probe and operatively coupled to said optical reader for retrieving said reagent information read by said optical reader from said two-dimensional data storage elements for use in programming said staining protocol; and

a chassis having a processing space and a drawer supporting said reagent rack, said drawer having a first position in which said reagent rack is positioned in said processing space and a second position in which said reagent rack is positioned

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outside of said processing space for one of adding reagents to reagent said containers and adding reagent containers to said reagent rack.

48. (WITHDRAWN) The apparatus of claim 47 wherein said rack is removably positioned within said drawer.

49. (WITHDRAWN) The apparatus of claim 47 further comprising a cover movable relative to said chassis between a closed condition for enclosing said processing space and an open condition, said cover remaining in said closed condition when said drawer is moved between said first and said second positions.